

YEVSTRATOV, Nikolay Fedorovich; YARTSEV, N., red.; POKHLEBKINA, M.,  
tekhn. red.

[Rest zones in the vicinity of Moscow] Zony otdykha pod Moskvoi.  
Moskva, Mosk. rabochii, 1962. 77 p. (MIRA 15:6)

1. Direktor Instituta general'nogo plana Moskv (for Yevstratov).  
(Moscow region--Recreation areas)

MATVEYEV, S.M., arkhitekt; STRAVINSKAYA, G.A., inzh.-ekonomist;  
SEGEDINOV, A.A., inzh.; SHAFRAN, V.L., inzh.; TROFIMOV, V.G.,  
zhurnalist; YEVSTRATOV, N.F., nauchnyy red.; MYASOVEDOV, B., red.;  
SHLYK, M., tekhn. red.

[The new boundaries of Moscow] Moskva v novykh granitsakh.  
Moskva, Mosk. rabochii, 1962. 151 p. (MIRA 15:7)

1. Institut general'nogo plana g. Moskv (for Matveyev,  
Stravinskaya, Segedinov, Shafran Trofimov)  
(Moscow--Guidebooks)

YEVSTRATOV, N. I.

Hard-faced cutter for drilling slim boreholes in hard rocks.  
Gor. zhur. no.11:76 N '62. (MIRA 15:10)

(Boring machinery) (Hard facing)

SKUBA, V.N., inzh.; CHEBOTAYEV, A.F., inzh.; YKVSTRATOV, N.I., inzh.

Devices for controlling the bearing capacity and tension of roof  
bolting. Bezop. truda v prom. 8 no.10:52-53 0 '64. (MIRA 17:11)

1. Noril'skiy gornometallurgicheskiy kombinat.

YEVSTRATOV, V.A.

Parameters of closed trimming presses. Standartizatsiia 25  
no. 5:24-25 My '61. (MIRA 14:5)  
(Power presses--Standards)

YEVSTRATOV, V.A.

Weight parameters of hammers without anvil blocks. Trudy KhFI  
21 Ser.met. no.4:117-121 '59. (MIRA 14:7)  
(Hammers)

ZHIVOV, L.I., kand.tekhn.nauk, dotsent; YEVSTRATOV, V.A.

"Technological processes of drop forging" by A.M.Mansurov.

Reviewed by L.I.Zhivov, V.A.Evstratov. Vest.mash. 42 no.4:87  
Ap '62. (MIRA 15:4)

(Forging) (Mansurov, A.M.)

YEVSTRATOV, V.A.

"Steam hammer forging" by I.I.Malev. Reviewed by V.A.Evstratov.  
Kuz.-shtam.proizv. 4 no.10:46-47 0 '62. (MIRA 15:12)  
(Forging) (Malev, I.I.)



YEVSTRATOV, V.A., tech.; LOBAROV, V.K., tech.

Forging in a closed die with a spring compensator.  
Mashinostroenie no.3:48-49 My-Je '65.

(MIRA 18:6)

YEVSTRATOV, V.F.; DOGADKIN, B.A., red.; TARASENKO, V.M., red.;  
ZALEPUGIN, D.Ye., tekhn. red.

[Studies in the physics and chemistry of crude and vulcanized rubber] Issledovaniia po fizike i khimii kauchuka i reziny. Pod obshchei red. V.F.Evstratova i B.A.Dogadkina. Moskva, Goskhimizdat, 1950. 146 p. (MIRA 16:8)

1. Moscow. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

(Rubber)

3106 Isledovaniya M. Fote: Krimin. Nau  
chuss. Reziy. Investigations on the Physics and  
Chemistry of Unvulcanised and Vulcanised Rubber.

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YEVSTRATOV, V.F., kandidat tekhnicheskikh nauk, redaktor; BELYAYEVA, Z.F., redaktor; VILLENIEVA, A.V., tekhnicheskij redaktor.

[Crude and vulcanized rubber (problems of general technology and rubber reclamation); collection of translated articles from foreign journals] Kauchuk i rezina; voprosy obshchei tekhnologii i regeneratsii reziny. Sbornik perevodov statei iz inostrannoi periodicheskoi lit-ry. Moskva, Izd-vo inostrannoi lit-ry, 1954.  
158 p. (MLBA 8:1)

(Rubber industry)

*Yevstratov V. F.*  
USSR/General Problems. Methodology. History. Scientific A  
Institutions and Conferences. Teaching. Problems  
of Bibliography and Scientific Documentation

Abs Jour : Ref Zhur-Khimiya, No 4, 1958, 10235

Author : V. F. Yevstratov, K. D. Bebris, V. L. Biderman,  
G. N. Vriyko, L. V. Desidley, A. N. Zherevtsov,  
F. I. Yashunskaya

Inst : Not given

Title : Development of the Tire Industry in the USSR  
in 40 Years

Orig Pub : Kauchuk i rezina, 1957, No 10, 13-26  
Bibliography 25-titles

Abstract : No abstract

Card 1/1

YEVSTRATOV, V.F.

KOSHELEV, Fedor Fedorovich; ELIMOV, Nikolay Sergeyevich; ~~YEVSTRATOV, V.F.~~  
red.; LUR'YE, M.S., tekhn.red.

[General rubber technology] Obshchaya tekhnologiya reziny. Moskva,  
Gos.nauchno-tekhn.izd-vo khim. lit-ry, 1958. 480 p. (MIRA 11:2)  
(Rubber)

YEVSTRATOV, V.F., kand. khim. nauk, red.; YASHUNSKAYA, F.I., kand. khim.  
nauk, red.; SATAROVA, M.V., red.; KHOMEYAKOV, A.D., tekhn. red.

[New rubbers; properties and uses. Collection of translated articles  
from foreign periodicals] Novye kauchuki; svoistva i primeneniye.  
Sbornik perevodov statei iz inostrannoi periodicheskoi literatury.  
Moskva, Izd-vo inostr. lit-ry, 1958. 500 p. (MIRA 11:7)  
(Rubber)



SOV/138-58-12-16/17

EDITORS: V.F. Yezratov and F.I. Yashunskaya

TITLE: New Rubbers - Properties and Uses (Novyye kauchuki.  
Svoystva i primeneniye)

PERIODICAL: Kauchuk i Rezina, 1958, Nr 12, p 45 (USSR)

ABSTRACT: A review of a collection of articles translated from  
foreign (non-Soviet) periodicals. Published by  
Izdatel'stvo inostrannoy literatury (Publishing House  
for Foreign Literature), Moscow, in 1958. There are  
500 pages.

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SOV/63-4-1-3/31

15(9)

AUTHORS: Yevstratov, V.F., Buyko, G.N., Candidates of Technical Sciences,  
Desidley, L.V.

TITLE: Truck Tires Made of Synthetic Rubber and Methods for Improving  
Their Quality (Avtomobil'nyye gruzovyye shiny iz sinteticheskogo kauchuka i puti povysheniya ikh kachestva)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 1,  
pp 15-26 (USSR)

ABSTRACT: For the description of the elastic properties of rubbers a correlation of the shear module and the module of elasticity has been developed in [Ref 10]. Hysteresis and dynamic fatigue are the factors which especially influence the life and the operation properties of tires. Fatigue changes the structure and the properties of the materials [Ref 14-16]. If in the tire carcass and in the tread synthetic rubbers are employed, the elasticity module of the tread rubber should be lower than the module of the breaker rubber. Heat formation in the tire tread has a considerable effect on its resistance. A reduction of the stress by 10 - 15% decreases the temperature of the tire appreciably (Figures 7 and 8). If the rigidity of the carcass

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Truck Tires Made of Synthetic Rubber and Methods for Improving Their Quality

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rubber is increased, the stress on the cord threads increases, too (Figure 9). Reduction of the thickness of the rubber-coated cord cannot be recommended, therefore. The following principles have been elaborated for the designing of tires made of synthetic rubber: 1) the elasticity of the tread should be increased by using a dissected pattern of the tread; 2) in the zones of greatest heat formation notches should be made in the tire tread; 3) the stress on the tire should be reduced by increasing its profile; 4) use of a more resistant cord; 5) the thickness of the rubber-coated cord should be increased. The operation properties of tires made of synthetic rubber according to the mentioned principles were not lower than those containing 47% natural rubber (Table 5). About 60% of the tires get out of service due to wear of the tread (Table 6). The use of polyamide cord increases the resistance of tires made of synthetic rubber (Figure 7). Active carbon blacks and additions of dispersed mineral fillers have also a considerable effect on the resistance of tires (Figure 14). The rubber type SKS-30AM-15 has shown good test results in the laboratory regarding heat formation and resistance (Table 8).

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Truck Tires Made of Synthetic Rubber and Methods for Improving Their Quality

The synthesis of new polyurethane rubbers offers new possibilities of improving the quality of the tires.  
There are 10 tables, 14 graphs, and 34 references, 23 of which are Soviet, 9 English, 1 German and 1 Canadian.

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YEVSTRATOV, V.; PRASHCHIKIN, V., inzh.; STRONGIN, M., inzh.

Scientific Research Institute of the Tire Industry. Avt.transp. 37  
no.1:56-57 Ja '59. (MIRA 12:2)

1. Ispolnyayushchiy obyazannosti direktora Nauchno-issledovatel'skogo  
instituta shinnoy promyshlennosti.  
(Tires, Rubber--Research)

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AUTHORS:

Sakhnovskiy, N.L., Smirnova, L.A., Yevstratov, V.F.

TITLE:

The Dependence of the Wear-Resistance of Protector Rubbers  
on Their Composition and Properties

PERIODICAL:

Kauchuk i Rezina, 1960, No. 4, pp. 22 - 26

TEXT:

The wear-resistance of rubber is studied in the USSR in the following fields: the wear-mechanism in tire casings, development of a composition of wear-resistant rubber, production of tires of a new design, developing methods for the evaluation of wear-resistance, etc. The relationship between the wear-resistance in rubber and some of its other properties, as well as the dependence of the wear-resistance on the type of polymer and carbon black used were studied here. The effects of temperature, mechanical friction and other factors on the wear of rubber were tested. With a variation in the testing conditions the absolute wear on the rubber will differ accordingly. Table 1 shows the figures obtained in the laboratory from tests of the relative wear-resistance in rubber produced from a natural rubber and CKS (SKB) base. As a result of the laboratory tests it was established that

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The Dependence of the Wear-Resistance of Protector Rubbers on Their Composition and Properties

with an increase in the rubber modulus, the wear-resistance increases proportionately to the increase in the intensity of the wear (Fig. 2). It appeared that the greatest increase in wear-resistance is found to be under conditions of maximum wear intensity. A study of wear-resistance was also carried out on protector rubber based on SKB, CKC-30AM (SKS-30 AM) and natural rubber polymers. The obtained data revealed that rubber on an SKB base is significantly surpassed by the SKS-30AM rubber. At present SKB in protector rubber is replaced by butadiene-styrene rubber. Natural rubber seemed to surpass SKB rubber, although the former is largely dependent on temperature. Additionally obtained data confirm the existing belief that the wear-resistance is dependent on the molecular weight and that the molecular weight distribution also has an effect on the wear-resistance. The CKW(SKI) rubber was also investigated as one of the new types of synthetic polymers and compared to that of natural rubber. The authors state that the successful solution of the problem for increasing the wear-resistance in rubber can be achieved by organizing a series of systematic investigations in the following manner: 1) a study of the mechanism of the wear in protector rubber under various conditions.

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The Dependence of the Wear-Resistance of Protector Rubbers on Their Composition and Properties

ditions of operation. This investigation should be carried out in cooperation with automobile plants and road construction organizations. 2) A study of the relationship between the wear-resistance of rubber and its polymer structure and the synthesis of new polymers on the basis of this study, which would yield a highly wear-resistant protector rubber under various conditions of operation. 3) Further investigation of the mechanism of rubber filling and the production of new fillers, which would yield a rubber with a higher wear-resistance. There are 3 tables, 7 figures and 6 non-Soviet references. X

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti  
(Scientific Research Institute of the Tire Industry)

PRESENTED: July 2 - 7, 1959, at the XI Conference on High-Molecular Compounds. III

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YEVSTRATOV, V.F.; MAKAREVICH, L.M.; SIMON, I.I.

Semiconductor instrument for checking, signaling, and  
automatic regulation of temperature of liquid products.  
Priborostroenie no.7:25-26 J1 '60. (MIRA 13:7)  
(Thermostat)

S/138/60/000/003/006/000  
A051/A029

AUTHORS:

Brodskiy, G.I.; Sakhnovskiy, N.L.; Reznikovskiy, M.M.; Yevstratov, V.F.

TITLE:

Mechanical and Thermochemical Destruction in the Wear of Rubber Under Various Conditions

PERIODICAL:

Kauchuk i Rezina, 1960, No. 8, pp. 22 - 29

TEXT:

Brief reference is made to the previous theories on the wear mechanism of rubber described in Refs, 1 - 10. It was found that the relative role of the mechanical and chemical factors in the wear mechanism of rubber depends on the testing conditions. On smooth surfaces with a low thermal conductivity the wear-out in rubber takes place primarily according to the mechanism of thermooxidizing destruction. On rough surfaces it takes place mainly according to the mechanism of mechanical wear-out. The experiments were conducted on a ~~MMWUN~~ MMW1 (NIISHP IML-1) Dunlop-Lamburne-type machine. The various types of abrasive surfaces selected for the study were: a smooth tin plate, smooth plexiglas, a steel plate with specially cut-out grooves on its surface, (the carbon black dosage was 50 weight parts to 100 weight parts of rubber), a plastic (vinylplast) plate, also with grooves, a Monocorund 150 polishing skin and a 4-mm plate of hard rubber (hardness = 84, as-  
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# Mechanical and Thermochemical Destruction in the Wear of Rubber Under Various Conditions

cording to shore). It was shown that the braking force  $F$  depends comparatively little on the nature of the wearing-out surface and the composition of the rubber. The wear intensity evaluated from the volume loss per min. changes more significantly. It is deduced the wear index  $v$ , depends on the nature of the surface and the nature of the surface material just as much as the wear intensity, and is characteristic only for a given friction couple. The investigated materials of the abrasive surfaces fell in the following sequence according to increase in wear intensity: tin < plexiglas < rubber < grooved plastic < grooved steel < Monocorund 150. The wear from a metal surface takes place at considerably lower temperatures than from materials with less thermal conductivity. It is also noted that the wear on rough uneven surfaces is primarily mechanical. It is further shown that the air oxygen has a substantial effect on the wear of rubber. The effect of the medium on the abrasion increases with a decrease of the abrasiveness of the abrasive coating and with an increase in testing temperature. Tread rubbers based on various raw materials: natural rubber, sodium-butadiene CK6-50 (SKB-50), butadiene-styrene CKC-30APKM (SKS-30ARKM), carboxylic CKC-30-1 (SKS-30-1) chloroprene, nitrile CKH-26 (SKN-26), etc., were selected for the study of the effect of oxygen and

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A051/A029

**Mechanical and Thermochemical Destruction in the Wear of Rubber Under Various Conditions**

nitrogen on wear. It is shown that the degree of change of wear in rubber, when switching over from tests in air to tests in nitrogen, basically depends on the nature of the polymer and the type of carbon black. A study was also conducted of the abrasion of tread rubber based on natural rubber having different anti-aging and anti-fatigue substances in its composition both in an air and nitrogen medium. It is shown that a number of anti-aging and anti-fatigue agents increase the wear-resistance of natural rubber when tested both in air and in nitrogen. Laboratory tests on abrasive skins revealed a predominance of mechanical wear. The authors point out that it is necessary to continue the study for selecting standard abrasive materials in order to attain a maximum similarity between laboratory testing conditions and those of the road. There are 6 tables, 3 figures, 1 diagram, 2 photographs and 15 references: 8 Soviet, 6 English, 1 German.

ASSOCIATION: Nauchno-issledovatel-skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry).

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S/138/60/000/01/03/010

AUTHORS: Sakhnovskiy, N.L., Yevstratov, V.F., Smirnova, L.A., Katkov, V.I.

TITLE: Rating of Wear Resistance of Tread Rubbers in Operation Tests of Tires 5

PERIODICAL: Kauchuk i Rezina, 1960, No. 1, pp. 10 - 15

TEXT: With the highly resistant cord being produced at present the wear of the tread in a tire is the basic reason for the eventual failure of a tire. Great importance is therefore being attached to the method of rating the wear resistance of rubber compounds. In this connection the article offers certain recommendations, which are based on the investigations conducted by NIISHP (Scientific Research Institute of the Tire Industry) during the last 3 years. Ordinary road tests are not sufficiently reliable for rating, due to the fact that they cover too wide a range of results, depending upon the conditions under which these road tests have been performed, such as kind and condition of roads, type of automobile, speed, load, position of tire, season, climatic condition, weather etc. A wet road, for instance, is liable to reduce wear of a tire 12 times. More reliable results can be obtained, if a batch of standard and experimental tires are tested simultaneously in one

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# Rating of Wear Resistance of Tread Rubbers in Operation Tests of Tires

meter pool. Under these circumstances a formula for calculating the relative wear resistance can be used which is given in the article. A method of changing the tires from front to rear and vice versa has been developed abroad. Another method consists in testing experimental and standard tires under strictly identical conditions within a comparatively short period of time thus reducing the range of results and obtaining a fairly accurate account of the wear resistance of tread rubbers. The article cites three means of measuring wear of tread, viz. by measuring the depth of grooves, using depth gage, by weighing the tire and by using radioactive isotopes. A special depth gage has been developed by V.V. Nikitin. Buist [Ref. 2] claims that the intensity of wear in the tread of a tire is not constant, but greater in the beginning of the test than subsequently. Thus it was found that intensity of wear of a tire on a passenger car becomes constant only after 500 kilometers of driving. Tests carried out with a Pobeda automobile have confirmed these findings. The intensity of wear and the amount of wear are expressed in 2 graphs shown in the article. Another graph shows the curve representing the run of a 260-20 tire, covering 40,000 km as calculated on the basis of the first measuring of wear. The method of performing road tests with standard tires

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Rating of Wear Resistance of Tread Rubbers in Operation Tests of Tires

is explained in the article as well as the formula which permits to calculate the relative average wear resistance of the tread. The method recommended for carrying out road tests for rating wear resistance permits results to be obtained in a comparatively short period of time (after about 8-12 thousand km) by reducing the range of results 2-3 times as compared with results of ordinary road tests. There are 6 tables, 4 graphs, 3 diagrams and 10 references; 2 Soviet, 6 English and 2 French.

ASSOCIATION: NIISHP (Scientific Research Institute of the Tire Industry)

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LYTKINA, M.B.; YAMIESKAYA, Ye.Ya.; YEVSTRATOV, V.F.; TROSHKINA, Ye.V.

Basic properties required of automobile tire cords. Kauch.1  
rez. 19 no.3:9-13 Mr '60. (MIRA 13:6)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Tire fabrics)



S/138/61/000/003/002/006  
A051/A129

**AUTHORS:** Buyko, G. N.; Sakhnovskiy, N. L.; Yevstratov, V. F.; Smirnova, L. A.; Levitina, G. A., and Katkov, V. I.

**TITLE:** Certain features of carboxyl-containing butadiene-styrene SKS-30-1 rubber and its evaluation in tread rubbers

**PERIODICAL:** Kauchuk i rezina, No. 3, 1961, 9-15

**TEXT:** The results of an investigation are given, which was conducted to develop a formulation and conditions for manufacturing wear-resistant tread rubber based on carboxyl containing butadiene-styrene CKC-30-1 (SKS-30-1) rubber. The results of an evaluation of the properties of rubbers and tires using treads based on the above-mentioned rubber are given. In developing the formulation of the tire tread rubber based on SKS-30-1 the best fillers were found to be the active furnace XAΦ (KhAF)-type carbon blacks. The extract of phenol purification (PH-6, PN-6), 10 w.p., was the best softener used in the amount of 45 w.p. of the KhAF carbon black (Vulkan 3) and ensuring a plasticity of the mixture according to Carriere of about 0.50. Magnesium oxide was chosen as the main vulcanizing agent based on work of

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Certain features of...

the VNIISK (Dolgoplosk, B. A., et al. - Ref. 1: Kauchuk i rezina, no. 3, 11, 1957; Ref. 2: Kauchuk i rezina, no. 6, 1, 1957). The vulcanizing group contained also thiuram and zinc oxide. The following vulcanizing group was selected (in w.p.): MgO - 2.0, ZnO - 1.0, sulfur - 0.8, thiuram - 1.0. The tire tread mixtures based on SKS-30-1 were prepared according to a double-stage process. It was noted that scorching depends to a great extent on the meteorological conditions during the period of the mixture preparation. It is assumed that the main reason for the scorching tendency of the SKS-30-1 mixtures in the fall and spring is apparently due to an elevated moisture content in the ingredients. It was shown that water has a significant effect on the scorching of the SKS-30-1 mixtures. The effect of the water increases with the content of metal oxides in the mixtures. The highly significant effect of small quantities of water on the scorching of SKS-30-1 mixtures containing metal oxides is explained by the fact that when water is added to the various micro-sections of the mixtures a polar medium is formed facilitating the interaction between the polymer acid and the metal oxides at comparatively low temperatures. A simple method for the removal of water is given, viz., the mechanical treatment of the mixtures at elevated temperatures over long periods of time. Experiments showed that when storing the

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mixtures for a period of ten days no noticeable increase in the moisture content or a tendency to scorching is observed (Fig. 4). The properties of the SKS-30-1 based rubber are compared to that of SKS-30ARKM and NR. The outstanding feature of the SKS-30-1 based rubber is said to be the combination of a high static modulus with a high relative elongation. It has superior resistance to thermal aging and its main advantage over the other two types is its extremely high resistance to crack growth in repeated bending. One of its disadvantages is its comparatively low temperature-resistance manifesting itself in a significant drop of the tensile strength at high temperatures. However, the latter property improves noticeably during the aging process, contrary to SKS-30ARKM and NR based rubbers. The tensility properties of the SKS-30-1-based rubber during the rolling process improve as opposed to the other types. The difference between SKS-30-1 rubber on one hand and NR and SKS-30ARKM rubbers on the other is noted in the dependence of the heat-resistance coefficient in tear-resistance on the roadability of the tires in stationary tests (Fig. 6). As to its hysteresis properties the SKS-30-1 rubber resembles the rubbers based on butadiene-styrene and is much inferior to NR. Data on experimental procedures showed that non-filled SKS-30-1 rubber contrary to SKS-30ARKM and NR rubber has a high wear-resistance

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under certain conditions. Tests of the tire tread rubber based on three types were performed on the IMU-3 (IMI-3) instrument and showed no significant differences in their wear-resistance. The dependence of the wear-resistance (in SKS-30-1 rubber) on the medium where the test is conducted is expressed to a lesser degree. This indicates a lesser intensity of the oxidation processes taking place in it during wear of the SKS-30-1 rubber as compared to the other varieties. The wear of SKS-30-1 rubber on a metallic grooved surface is much less. The results of service tests for both cars and trucks showed that tread rubber based on SKS-30-1 material exceeds the other materials in its wear-resistance, e. g., that of SKS-30ARKM and SKS-30AM. Tire treads based on SKS-30-1 rubber were tested on the road and under stationary conditions. The first batch of the truck and automobile tires were damaged completely owing to a breakdown of the protector joint after a 5 - 15 thousand km run. It is recommended removing the upper scorched layer of the joint when producing SKS-30-1 treads. The relationship of the joint stability in SKS-30-1 treads to the type of adhesive layer shows: 1) that adhesives based on NR sharply decrease the stability of the joint, 2) the adhesives based on BSK ensure a higher stability of the joints, 3) the greatest joint stability is obtained when using stable adhesives based on SKS-30-1.

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A051/A129

Certain features of...

One of the disadvantages of SKS-30-1 tires is said to be the lowered stability of the adhesion between the tread and the breaker based on NR. One of the outstanding features of the SKS-30-1 tire treads as compared to other types, such as butadiene-styrene rubber is the absence of tire damage due to a defect by cracking along the grooves of the tread. The authors conclude that the carboxyl-containing rubbers are promising for use in tread rubber for the automobile industry. There are 6 tables, 6 graphs, 1 photograph and 4 Soviet references.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti  
(Scientific Research Institute of the Tire Industry) ✓

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Certain features of...

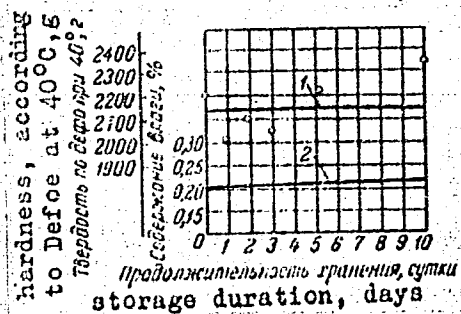


Figure 4:

Effect of the duration of storage of mother liquor mixture from SKS-30-1 on the content of moisture and tendency to scorching:

- 1 - hardness according to Defoe at 40°C;
- 2 - moisture content.

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Certain features of...

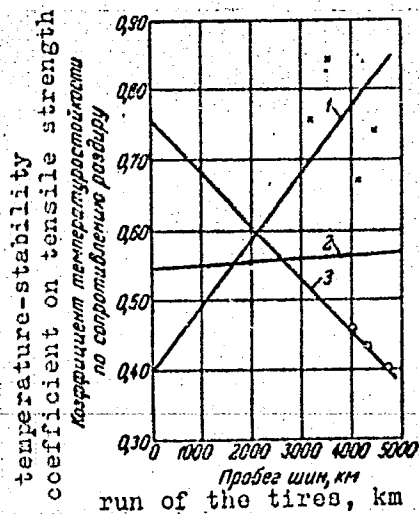


Figure 6:

Relationship of the temperature stability coefficient on tensile strength to the value of the run of the tires on stationary testing:

- 1 - rubber based on SKS-30-1,
- 2 - rubber based on NR,
- 3 - rubber based on SKS-30ARKM.

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A051/A129

AUTHORS: Badenkov, P.F., Vostroknutov, Ye.G., Yevstratov, V.F.  
TITLE: Increasing the production volume and elevating the technical level  
of the Soviet tire build-up industry  
PERIODICAL: Kauchuk i rezina, <sup>20</sup>no. 4, 1961, 4 - 7

TEXT: Under present conditions of automobile tire use, the casing is found to "outlive" the tread. In 1965, the production of repaired tires will exceed by over 12 times that of 1960. This repair can be accomplished by a proper method of tire selection in automobile plants, in order to carry out the necessary repairs. Larger and more economical plants and repair shops must be built, usually by the Sovnarkhozes and the smaller ones by the Ministries of Agriculture, etc. The location of these plants should depend on favourable local conditions. The tire build-up shops of the automobile plants should specialize only in the repair of local damage, which requires manual labor. An estimation is given for the number of tires to be repaired in an average Oblast: number of automobiles - 20,000; number of wheels - 120,000; average life time of the tire - 1.5- 2

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A051/A129

Increasing the production ...

years; number of damaged tires per year - 60,000 - 80,000; number of tires suitable for repair - 30,000 - 40,000. Thus, for an average Oblast' one plant with a total tire build-up capacity of 50,000 per year should be sufficient (i.e. 30,000 repaired tires). New tire build-up equipment is needed. Tests of various machinery and equipment are being conducted at the Experimental Tire-Repair Plant of the NII shinnoy promyshlennosti (NII of the Tire Industry) and beginning in 1961, these machines will be mass-produced. The equipment is suitable for all types of tires up to 14.00-20 in size. The roadability of the repaired tires compared to new ones, based on the average size, should increase from 20-25% in 1960 to 50-55% by 1965. The guaranteed roadability standards of the repaired tires should be developed and confirmed. Until recently, low-quality rubbers were used in tire build-up material, having a much higher physico-mechanical index (that of mass-produced tire rubber). The content and scale of laboratory and industrial tests conducted so far give only partial satisfaction. A special group of specialists should be established in the Gosplan of the USSR, VSNKh, Goskhimkomitet, Goskomitet for the problems of automation and machine-building, to deal with the repair of tires. The following problems must further be handled: 1) research for new tire build-up materials; a) development of new rubber composition, adhesives, pastes for low-temperature vulcanization; b) development of

Card 2/3

Increasing the production ...

S/138/61/000/004/001/006  
A051/A129

special rubber compositions and adhesives for the repairing process, using hot vulcanization; 2) new industrial technologies, equipment and instruments for the repair of tires; a) new methods for the heating of tires and tire build-up materials in drying, application of the materials, rolling and vulcanization of the tread; b) efficient types of polishing-copying and rolling machines, infrared driers, individual and bandage vulcanizers, tools for inserting and removing boiling chambers; c) new methods and instruments for express-control; 3) personnel training for the tire build-up industry. The organization of appropriate departments in the MITKhT im. Lomonosov, LKhTI, DKhTI, and other chemical technological institutes is recommended. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

Card 3/3

LYTKINA, M.B.; BERESTNEV, V.A.; YEVSTRATOV, V.F.; KAROIN, V.A.

Physical and mechanical properties of viscose cord. Khim.volok.  
no.6:29-33 '61. (MIRA 14:12)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Rayon)

YEVSTRATOV, V.F., kand.khim.nauk; SHVARTS, A.G.

New synthetic rubbers. Zhur.VKHO 7 no.2:172-180 '62.

(MIRA 15:4)

(Rubber, Synthetic)

REPORT: Effect of vulcanized rubber coatings and of test types on the type and amount of wear

SWEDEN: Omvärld: radina, no. 6, 1963, 20-26

1963: vulcanized rubber, abrasion, wear

ABSTRACT: In the present investigation various types of wear in car and truck tires were studied under road conditions and by testing machines. The findings were correlated with the kind of stock used for the tread, supplemented by microscopic examination of tread sections. It was found that on modern class A roads under standard loads the tread was wearing off after approximately 20 000 revolutions of the wheel, the surface of the tire being smooth and showing the so-called fatigue-type wear. On class B roads, on the other hand, the abrasive type of wear became predominant, while the presence of 1% sharp curves increased the wear fourfold. Other types of wear were also studied, and the relationship of the type and rate of wear of tires to their modulus and tensile and tear resistance

end rate of wear of protective stock as the modulus and tensile and tear resistance

Card 1/2

17-38861-1000 12-30-72

obtained. Experimental evidence was obtained that tear and wear causes an intensive destruction of the molecules of natural rubber, as evidenced by a 2.4 times increase in solubility in chloroform after 72 hours storage at 100C, and a tenfold increase in surface activity against a concrete surface for the same duration. Since the rate of destruction in this case has not yet been concluded that the change in

Orig. paper has: 7 figures and 3 tables.

ASSOCIATION Nauchno-issledovatel'skiy institut shirokoy promyshlennosti (Selen-  
Association of the Fire Industry

DATE: 1970-1971

ENCL: 00

NO. 10-1971-1972

OTHER: 007

s/0138/63/000/012/0014/0021

ACCESSION NR: AP4010253

AUTHORS: Sakhnovskiy, N. L.; Yevstratov, V. F.; Arenzon, N. K.; Raznikovskiy, N. M.; Grigorovskaya, V. A.

TITLE: Some peculiar properties of protective rubbers from stereoregular butadiene rubber SKD

SOURCE: Kauchuk i rezina, no. 12, 1963, 14-21

TOPIC TAGS: rubber, stereoregular rubber, butadiene rubber, polymer, SKD rubber, plasticity, physicochemical properties, BSK rubber, wear, fatigue, abrasive wear, thermo oxidative resistance, deformation

ABSTRACT: Protective rubbers from 100% SKD, vulcanized for 50 minutes at 143C, were rated below natural rubber and BSK rubber, but possessed satisfactory heat resistance. Combinations with other rubbers, especially with isoprene rubbers in a 1:1 ratio, result in superior strength, but lower the heat resistance. At room temperature SKD rubbers surpass natural rubber in elasticity, but at 100C the trend is reversed. While being listed below natural rubber in resistance to expansion of cracks, the SKD rubber showed in road tests a high resistance to crack formation. Unfilled SKD protective rubbers proved superior to natural rubber and BSK

Card 1/2



ACCESSION NR: AP4010253

(europrene) rubber in resistance to wear, which is to a large extent attributed to a low coefficient of surface friction. It was found that SKD rubbers possessed a high degree of resistance to thermo-oxidative processes associated with abrasion, as well as with thermal aging. The destruction of the surface layer of SKD rubber sets in after a far greater number of deformation cycles as compared with natural rubber. It is concluded that under severe test conditions protective vulcanizates from SKD rubber would offer great advantages over compounds on the base of natural and BSK rubbers. Orig. art. has: 6 tables, 2 charts, and 2 pictures.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promy\*shlennosti  
(Scientific Research Institute of the Tire Industry)

SUBMITTED: 00

DATE ACQ: 03Feb64

ENCL: 00

SUB CODE: CH

NO REF SOV: 005

OTHER: 006

Card 2/2

SAKHNOVSKIY, N.L.; YEVSSTRATOV, V.F.; ARENZON, N.M.; REZNIKOVSKIY, M.M.;  
GRIGOROVSKAYA, V.A.

Some characteristics of the properties of tread rubber prepared  
from synthetic stereoregular butadiene rubber. Kauch. i rez.  
22 no.12:14-21 D '63. (MIRA 17:9)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

YEVSTRATOV, V.F., doktor tekhn. nauk, red.; DEVIRTS, E.Ya., red.

[Frictional wear of rubber] Friksionnyi iznos rezin;  
sbornik statei. Moskva, Khimiia, 1964. 271 p.  
(MIRA 17:12)

1. Nauchno-tekhnikeskoye soveshchaniye po friksionnomu  
iznosu rezin. Moscow, 1961.

2

L 31996-65 ZAT(a)/ZET(c)/ZAP(j)/T Pc-l/Pr-l RM/CS

ACCESSION NR: AT5004102 B/0000/64/000/000/0170/0173

AUTHOR: Guseva, V. I.; Akutin, M. S.; Zaripova, M. G.; Karmin, B. K.;  
Kozlova, V. K.; Smirnova, L. N.; Yevstratov, V. F.

TITLE: Wear resistance of vulcanizates based on some new rubber-resin compositions.

SOURCE: Nauchno-tekhnicheskoye soveshchaniye po friktsionnomu iznosu rezin.  
Moscow, 1964. Frikttsionnyy iznos rezin (Frictional wear of rubber); sbornik statey.  
Moscow, Izd-vo Khimiya, 1964, 170-173

TOPIC TAGS: synthetic rubber, rubber wear, frictional wear, rubber resin vulcanizate,  
rubber filler, carbon black, rubber mechanical property, butadiene styrene rubber, urea  
formaldehyde resin, epoxyamine resin

ABSTRACT: The wear resistance and thermo-mechanical properties of vulcanized  
butadiene-styrene rubber SKS-30ARK, its mixture with epoxyamine resin 89 and urea-  
formaldehyde resin MFA-155, and also the mechanical properties of the non-vulcanized  
mixture were studied to establish compositions for optimal service and processing pro-  
perties. Resin 89 was added to the latex. Tensile strength, relative elongation, residual

Card 1/2

L 31996-65

ACCESSION NR: AT6004102

elongation, and modulus at 300% elongation were measured at 20 and 100C, tear strength at 100C, rebound resilience at 20 and 100C, and hardness, friction -and dynamic-modulus, and wear resistance on the DMI-3 wear tester. The addition of 8% resin 89 markedly improved the mechanical properties and particularly the wear resistance of the vulcanizate, and with additions of 2-20% resin smaller amounts of channel black were required to produce vulcanizates with optimum physical-mechanical properties. Vulcanizates with 8% resin 89 and 45% carbon black showed marked improvement in wear resistance and mechanical parameters except for a decrease in tear strength. The rubber-resin latex, however, showed a significant decrease in extrudability and calendaring capacity. Addition of non-specified amount of resin MFA-155 doubled the tensile strength of the latex. Vulcanizates based on the rubber-resin composition with 30% carbon black KhAF had improved aging stability, thermal stability, tear strength, and wear resistance as compared with vulcanizates prepared without resin and with 60% KhAF. Wear of resin-rubber compositions was very little affected by an increase in temperature. Orig. art has: 1 figure and 3 tables.

ASSOCIATION: None

SUBMITTED: 05Aug64

ENCL: 00

SUB CODE: MT

NO REF SOV: 002

OTHER: 002

Card 2/2

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1. THE NUMBER OF VOLUNTEERS FOR THE CONSTRUCTION OF THE

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YEVSTRATOV, V.F., doktor tekhn.nauk; PRASHCHIKIN, V.N.

Tires of new designs. Zmur. VKSC 10 no.2:164-168 '65.

(MIRA 13:6)



BADENKOV, P.F.; YEVSTRATOV, V.F.; KHANINA, G.N.

Improving the quality of tires to come up to the level of the best world standards. Kauch. i rez. 24 no.10:2-7 '65.

(MIRA 18:10)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

YEVSTRATOV, V.F.; BUYKO, G.N.; ARENZON, N.M.; SAKHNOVSKIY, N.L.;  
KARMANOVA, A.I.

Effect of the degree of filling with carbon black and softeners  
on the properties of regular stereobutadiene rubber for treads.  
Kauch. i rez. 24 no.12:2-5 '65. (MIRA 18:12)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

I. 38926-66

ACC NR: AP6016757

(A)

SOURCE CODE: UR/0118/66/000/001/0043/0045

AUTHOR: Yevstratov, V. F. (Engineer); Tul'chinskiy, Yu. V. (Engineer)

ORG: none

32  
B

TITLE: Reliability indexes of certain elements of automation systems

SOURCE: Mekhanizatsiya i avtomatizatsiya proizvodstva, no. 1, 1966, 43-45

TOPIC TAGS: reliability engineering, automation equipment, industrial automation

ABSTRACT: Data are given on the reliability of certain elements and components which, to a known degree, broaden the possibility of using information on failure rates. The conditions and modes under which the elements and components function and the confidence interval of the values of the failure rates make it possible to use the cited indexes of reliability in calculations determining the order of magnitude of reliability. These data on the reliability of elements are the result of the statistical processing of information obtained during tests of an experimental automatic control system for refrigerating units on a fishing trawler. Statistical processing of the obtained information was done on the assumption that the law of the distribution of the service life of the elements is indicative. The tests were carried out according to a plan of the type (n, B, t). This plan calls for testing n elements during time t. Each element that failed was replaced by a new one, which is indicated by

UDC: 621.3.019.3

Card 1/2

L 38926-56

ACC NR: AP6016757

the symbol B. As a result of the statistical processing of the experimental data the authors derived the confidence values of the average failure rates of magnetic and semiconductor elements and the mean group failure rate of resistors, diodes, transistors, and windings. Orig. art. has: 2 tables and 4 figures.

SUB CODE: 14/ SUBM DATE: 00/ ORIG REF: 000/ OTH REF: 000

Card

2/2

YEVSTRATOV, V.M.

The LOUVT-2m coal suction pump. Biul. tekhn. ekon. inform. no.9:13-14  
'59. (MIRA 13:3)

(Hydraulic mining)

**YEVSTRATOV, V.V.** PA - . 31147

**AUTHOR** YANG Yu.I., YEVSTRATOV V.V.

**TITLE** Strength And Plasticity of Modified Cast Iron in Varying Stressed States.

**PERIODICAL** (Prochnost' i plastichnost' modifitsirovannogo chuguna pri razlichnykh napryazheniyakh sostoyaniyakh - Russian)  
Doklady Akademii Nauk SSSR, .957 Vol 113, Nr 3 pp 573-575 (U.S.S.R.)  
Received 6/1957 Reviewed 7/1957

**ABSTRACT** Investigations were carried out with respect to linear tensional stress and nonlinear pressure in two and three axial directions. The apparatus described in ZA, 1955, Nr 8, was used. The sample investigated was similar to the type MSCh 38-40. It was the purpose of these basic investigations to determine stresses and deformations in the stage of destruction. However, because of the impossibility of further using the experimental apparatus, the produced state of stress could in some cases not be extend to the state of full destruction. The values obtained for the intensity of stresses and deformations are shown in a table. Both quantities change considerably according to the average normal stress. Comparison of the results obtained with the conditions for destruction according to various theories showed that none of these theories gives a satisfactory description of the phenomenon. The best results were obtained in connection with the application of the theory developed by Kammerer-Davin. But also in this case the investigation, which was carried out at  $u = +1$  (linear compression) showed a decrease

Card 2/2

Strength And Plasticity of Modified Cast Iron in Varying Stressed States. PA - 3147

of resistance and not an increase as should have been according to theory.

(With 1 table, 4 illustrations, and 3 citations from Slavic publications).

ASSOCIATION Leningrad Polytechnic Institute "M.I.Kalinin".  
PRESENTED BY IOFFE A.I., Member of the Academy  
SUBMITTED 16.6.1956  
AVAILABLE Library of Congress  
Card 2/2

YEVSTRATOV, V.V., st. преподаvatel'

Critical stresses and deformations of aluminum bronze and modified  
cast iron under various stress conditions. Izv. vys. ucheb. zav.;  
 mashinostr. no.1:49-53 '58. (MIRA 11:6)

1.Tul'skiy mekhanicheskiy institut.  
(Cast iron--Testing) (Aluminum bronze--Testing)



YEVSTRATOV, YE.

"Diagonal Cross-Seeding of Cereal Grasses." p. 16. (ZA SOCIALISTICKE ZEMEDLSTVI,  
Vol. 4, no. 1, Jan. 1954, Praha, Czechoslovakia)

So: Monthly List of East European Accessions, LC, Vol. 3, No. 5, May 1954/Unclassified

BORISENKO, Ye.Ya., prof., doktor sel'skokhoz. nauk; YEVSTRATOVA, A.M.

Growth types of animals. Izv. TSKHA no.4:185-196 '65.

(MIRA 18:11)

1. Kafedra razvedeniya sel'skokhozyaystvennykh zhivotnykh  
Moskovskoy sel'skokhozyaystvennoy ordena Lenina akademii  
imeni Timiryazeva. Submitted February 10, 1965.

OKHAPKINA, L.L.; BYKOVA, A.P.; YEVSTRATOVA, G.A.

Rapid determination of nitrogen in coals. Zav. lab. 31  
no. 3:277-279 '65. (MIRA 18:12)

1. Institut nefte- i uglekhimicheskogo sinteza pri  
Irkutskom gosudarstvennom universitate im. A.A. Zhdanova.

ACC NR. AP5022431

SOURCE CODE: UR/0109/65/0.0/009/1663/1671

AUTHOR: Yevstropov, G. A., Tsarapkin, S. A.

ORG. none

TITLE: Investigation of slotted-waveguide antennas having identical resonant radiators

SOURCE: Radiotekhnika i elektronika, v. 10, no. 9, 1965, 1663-1671

TOPIC TAGS: waveguide antenna, slot antenna

ABSTRACT: The internal conditions in a slotted-waveguide TW antenna having identical resonant radiators are investigated by means of a quadripole theory and finite-difference equations. The antenna is replaced by its equivalent circuit consisting of sections of a two-wire line shunted by conductances. An allowance for the fundamental-mode slot antenna is made in order to correctively determine the amplitude and phase distribution of the field in the aperture. The cases of a waveguide with a slot antenna and a waveguide with arbitrary-termination waveguide are considered. The distribution of TB and BW inside the waveguide is shown. The results of calculations are given in tables.

U.S. DEPT. OF COMMERCE, BUREAU OF STANDARDS, NIST, May 64 / ORIG REF: 003 / OTH REF: 001

Card 1

UDC 621.396.677.711.001.5

PEREL'MAN, Ya.M.; YEVSTRATOVA, K.I.

Potentiometric titration of the salts of organic bases in  
nonaqueous solvents. Part 2: Quantitative determination of  
promedol and dibazole. Trudy Len. khim-farm. inst. no.14:  
31-37 '62 (MIRA 17:2)

Quantitative determination of codeine phosphate. Ibid. 838-40

PEREL'MAN, Ya.M.; YEVSTRATOVA, K.I.

Potentiometric titration of mixtures of dibazol with papaverine, salsoline, salsolidine and dionine. Apt. delo 12 no.5:27-31  
S-0°63. (MIRA 16:11)

1. Leningradskiy khimiko-farmatsevticheskiy institut.

✱

EXCERPTA MEDICA Sec 4 Vol 12/8 Med. Micro. Aug 59

2258. A METHOD FOR DETERMINATION OF SMALL AMOUNTS OF GLUCOSE  
IN THE PRESENCE OF LARGE AMOUNTS OF LACTOSE (Russian text) -  
Yevstratova K. I. Chair of Technol. of Antibiotics, Chemo-pharma-  
ceutic Inst., Leningrad - BIOKHIMIYA 1958, 23/2 (181-184) Tables 3

The reagent consists of 20 ml. Cu acetate solution (48 g./l.), 3.5 ml. 10% lactic  
acid solution and 10 ml. 20% Na acetate solution. As little as 0.01% of glucose can  
be determined in the presence of up to 1.75% of lactose. (II, 4)

PEREL'MAN, Ya.M.; YEVSTRATOVA, K.I.

Pontentiometric titration of the salts of organic bases in non-aqueous solutions. Quatitative determination of spasmolytine and phenatine. Apt. delo 9 no. 5:16-19 S-0 '60. (MIRA 13:10)

1. Kafedra farmatsevticheskoy khimii Leningradskogo khimiko-famatsevticheskogo instituta (zav. - prof. A.M. Khaletskiy).  
(PHENATINE) (SPASMOLYTINE) (POTENTIOMETRIC ANALYSIS)



PEREL'MAN, Ya.M.; YEVSTRATOVA, K.I.

Quantitative determination of benzacine in tablets. Med. prom. 14  
no. 10:35-37 0 '60. (MIRA 13:10)

1. Leningradskiy khimiko-farmatsevticheskiy institut.  
(BENZILIC ACID)

YEVSTRATOV<sup>2</sup>~~E~~, K. I. Cand Tech Sci -- "Study in the field of analysis of sugars  
in the production of antibiotics." Len, 1961 (Min of Higher and Secondary  
Specialized Education UkSSR. Kiev Technological Inst of Food Industry im  
A. I. Mikoyan). (KL, 4-61, 196)

180  
~~250~~

LUKOMSKIY, G. I.; YEVSTRATOVA, K. I.

Hamartoma of the lung. *Gruiz. khir.* no.4:105-107 '61.

(MIRA 14:12)

1. Iz fakul'tetskoy khirurgicheskoy kliniki sanitarno-gigiyenicheskogo fakul'teta I Moskovskogo ordena Lenina meditsinskogo instituta imeni I. M. Sechenova (zav. - prof. I. S. Zhorov) Adres avtorov: Moskva, M. Kochki, d. 9. Bol'nitsa No. 61.

(LUNGS—TUMORS)

SHEKHTER, Yu.N.; YEVSTRATOVA, N.I.; KALASHNIKOV, V.P.; NIKOLAYEVA, V.M.;  
YERMILOV, A.S.

Lubricating and cooling fluids with molybdenum disulfide. Stan 1  
instr. 36 no. 12:13-15 D '65 (MIRA 19:1)

SHEKHTERM Yu.N.; KALASHNIKOVA, V.P.; YEVSTRATOVA, N.I.

New lubricating and cooling fluids. Stan. i instr. 35 no.6:  
34-37 Je '64 (MIRA 17:8)

SHEKHTER, Yu.N.; YEVSTATOVA, N.I.; CHEREPENINA, V.N.

Addition of corrosion inhibitors to sour fuels. Khim. i tekhn.  
topl. 1, sel 9 no.12:47-51 D '64. (MIRA 18:2)

1. Moskovskiy zavod "Neftegaz".

38636

3/081/62/000/009/053/075

B166/B144

11.9700

AUTHORS: Kalashnikov, V. P., Shekhter, Yu. N., Yevstratova, N. I.,  
Dol'berg, A. L., Prygayeva, Ye. D.

TITLE: Production of sulfonate additives by sulfurizing mineral oils  
with  $\text{SO}_3$  in liquid  $\text{SO}_2$

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 9, 1962, 525, abstract  
9M270 (Novosti neft. i gaz. tekhn. Nefteperabotka i nefte-  
khimiya, no. 6, 1961, 11 - 16)

TEXT: A production process for obtaining oil-soluble sulfonates by sul-  
furizing mineral oils with  $\text{SO}_3$  in liquid  $\text{SO}_2$  is worked out. This offers  
substantial advantages over sulfurization with oleum or gaseous  $\text{SO}_3$ . The  
optimum conditions for sulfurizing 46-5 (AS-5), 1-8 (D-8), 40-9,5 (AS-9,5)  
and 20-20 (MS-20) oils are selected. The sulfonates of various metals were  
obtained. It is established that the basic Ca salts of the sulfoacids ob-  
tained by sulfurizing oils which have been produced by the selective refin-  
ing of eastern petroleum show good detergent and dispersive properties.  
Card 1/2

Production of sulfonate ...

S/001/62/000/009/058/075  
B166/B144

A detergent and dispersive additive, M<sup>-</sup>-102 (NG-102), was produced as a concentrate of Ca sulfonate, based on sulfurized AS-9,5 oil produced by the Novokuybyshev NPZ (14% by weight SO<sub>3</sub> to oil). Tests of the additive, carried out under laboratory and service conditions, established its high detergent and dispersive properties and showed the necessity of combining it with an efficient antioxidant. The method of sulfurizing oils with SO<sub>3</sub> in liquid SO<sub>2</sub> to obtain oil-soluble sulfonates is recommended for wide introduction<sup>2</sup> into industry. [Abstracter's note: Complete translation.]

Card 2/2



YEVSTRATOVA, N. I.; KALASHNIKOV, V. B.; LAPIN, V. N.; SHEKHTER, Yu. N.

Obtaining thiosalts from the tar of Kasppir shales. Trudy  
VNIIT no. 11:144-154 '62. (MIRA 17:5)

KREYN, S.E.; KALASHNIKOV, V.P.; SHEKHTER, Yu.N.; YEVSTRATOVA, N.I.;  
DOL'BERG, A.L.

Production of clear sulfonate additives. Khim.i tekhn.topl.i  
masel 7 no.2:19-24 F '62. (MIRA 15:1)

1. Moskovskiy zavod "Neftegaz".  
(Lubrication and lubricants—Additives)

KOBYAKOVA, Ye.B., kand. tekhn. nauk, dotsent; YEVSYUKOVA, V.K., inzh.

Dependence of the resistance to abrasion and heat insulation  
properties of knit goods on stretching. Nauch. trudy MTILP  
no.28:120-124 '63. (MIRA 17:11)

1.Kafedra tekhnologii shveytnogo proizvodstva Moskovskogo  
tekhnologicheskogo instituta legkoy promyshlennosti.

YEVSTRATOVA, N.M., student; GUBERNSKAYA, T.N., student; CHURINOVA, L.G.,  
student; BARAMBOYM, N.K., doktor khimicheskikh nauk, prof.

Ion exchanging compositions containing thiol groups.  
Nauch. trudy MTILP no.26:35-37 '62. (MIRA 17:5)

1. Kafedra fizicheskoy i kolloidnoy khimii Moskovskogo  
tekhnologicheskogo instituta legkoy promyshlennosti.

SHEKHTER, Yu.N.; KALASHNIKOV, V.P.; YEVSTRATOVA, N.Ye.; LYAKHOVICH, R.S.;  
NIKOLAYEVA, V.M.

Self-emulsifying oils based on water and oil soluble sulfonates.  
Khim. i tekhn. topl. 1 masel 8 no.4:32-34 Ap '63.  
(MIRA 16:6)

1. Moskovskiy zavod "Neftegaz".  
(Emulsifying agents) (Sulfonic acids)

RYBALKO, K.S.; MASSAGETOV, P.S.; YEVSTRATOVA, R.I.

Sesquiterpene lactones from some species of wormwood. Med.  
prom. 17 no.6:41-43 Je'63 (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstven-  
nykh i aromaticeskikh rasteniy.

RYBALKO, K.S.; BAN'KOVSKAYA, A.N.; YEVSTRATOVA, R.I.

Sesquiterpene lactone from the Austrian wormwood (*Artemisia austriaca* Jacq.). Med. prom. 16 no.3:13-14 Mr '62. (MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh i aromaticeskikh rasteniy.

(ARTEMISIA) (SESQUITERPENES)

YEVSTRATOVA, R.I.; RYBALKO, K.S.; PIMENOVA, R.Ye.

Crystalline substances from *Carpesium eximium* C. Winkler.  
Khim. prirod. soed. no.5:364-365 '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut lekarstvennykh  
i aromaticeskikh rasteniy. Submitted May 3, 1965.



89905

S/190/61/003/003/003/014  
B101/B204

15 8105

AUTHORS: Margaritova, M. F., Yevstratova, S. D.

TITLE: Polymerization of methyl methacrylate in the presence of a system of organic acid - dimethyl aniline. I

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 3, 1961, 390-397

TEXT: A paper by Yü ch'iao (Ref. 1: Thesis, MITKhT im. Lomonosova, 1958 (Moscow Institute of Fine Chemical Technology imeni Lomonosov)) showed that polymerization with amines may be initiated also when organic acids (instead of peroxides) are present. It was the aim of the present investigation to study the mechanism of the reaction between dimethyl aniline (DMA) and an organic acid during the polymerization of methyl methacrylate (MMA). Previous experiments showed that light has an effect upon the process. In this paper, the authors therefore present results obtained by polymerization in the dark. The organic acid used was benzoic acid (BA). The kinetics of polymerization was examined dilatometrically. Polymerization took place at 70°C. 1) In the case of an equimolar ratio between

Card 1/7

Polymerization of methyl...

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DMA and BA the rate  $w$  of polymerization was observed to increase with the concentration of initiators (Fig. 3). The order of the reaction was 0.5 in which case the equation

$$w = k[BA]^{1/2} = k[DMA]^{1/2} \quad (1) \text{ holds.}$$

An activation energy of  $13.2 \pm 0.5$  kcal/mole followed from experiments with 0.3 mole/l of both BA and DMA at 50, 60, 70, and 80°C. 2) Constant concentration of the one initiator and rising concentration of the other (Fig. 5) also accelerated the rate of polymerization. 3) When another organic acid (monochloroacetic acid, acetic acid, trichloroacetic acid) was used instead of BA,  $w$  would increase with rising dissociation constant of the acid. With trichloroacetic acid, however, after a rapid start polymerization soon slowed down. 4) The copolymerization of MMA with styrene initiated by an equimolar mixture of DMA and BA was studied. The results agree with data obtained by R. Dannley, E. Kay (Ref. 3: J. Amer. Chem. Soc., 77, 1046, 1955). The reaction is governed by a radical mechanism. The authors found the following relationships between the reaction mechanism and the ratio of the initiators: A) Equal concentration  $[BA] = [DMA]$ . The initiators form an active complex which

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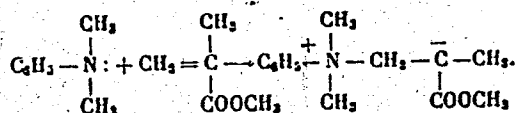
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Polymerization of methyl...

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decomposes into free radicals. This reaction proceeds stepwise:

$\text{N}^+ + \text{HOCOR} \rightleftharpoons \text{N}^+ - \text{COROH} \rightleftharpoons \text{N}^+ \text{OH} + \text{COR}$ . The rate constant in this case, as calculated according to Eq. (1), was 0.0382. B)  $[\text{DMA}] > [\text{BA}]$ . Beside the reaction initiated by the combined system, a second process, initiated by DMA only, takes place. The authors write for the total reaction rate  $w_{\text{tot}} = w_1 + w_2 = k_1([\text{DMA}] - [\text{BA}]) + k_2[\text{BA}]^{1/2}$  (2).  $w_1$  stands for the reaction rate with DMA only,  $w_2$  for that with DMA and BA. The reaction between DMA and MMA proceeds according to the scheme A:



C)  $[\text{BA}] > [\text{DMA}]$ . In this case, a reaction according to scheme B occurs:

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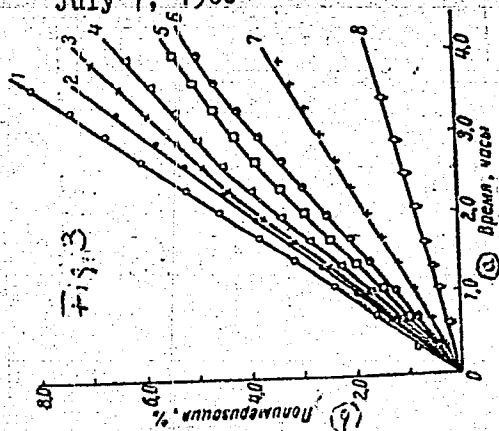
Polymerization of methyl...

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B101/B204

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova  
(Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

SUBMITTED: July 7, 1960



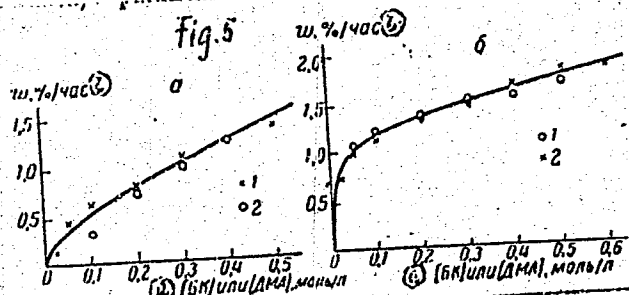
Legend to Fig. 3: a) time, hr; b) polymerization;  
1)  $[BA] - [DMA] = 0.6$ ;  
2) 0.5; 3) 0.4; 4) 0.3; 5) 0.2;  
6) 0.1; 7) 0.05 mole/l;  
8) thermal polymerization.

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Polymerization of methyl...

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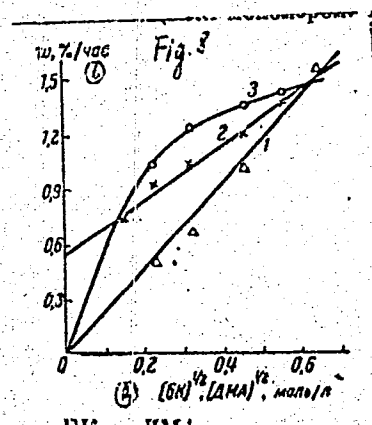
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Legend to Fig. 5a:  $\times$  1)  $[BA] = 0.2$  mole/l = const;  $\circ$  2)  $[DMA] = 0.2$  mole/l = const; a)  $[BA]$  or  $[DMA]$  mole/l, b) %/hr.  
Legend to Fig. 5b:  $\circ$  1)  $[BA] = 0.3$  mole/l = const;  $\times$  2)  $[DMA] = 0.3$  mole/l = const.

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Polymerization of methyl...



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Legend to Fig. 8:

- 1)  $[BA] = [DMA] = 0.3$   
mole/l; 2)  $[DMA] = 0.3$   
mole/l; 3)  $[BA] = 0.3$   
mole/l; a)  $[BA]^{1/2}, [DMA]^{1/2}$   
mole/l; b)  $\%/hr.$

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Polymerization of methylmethacrylate in the presence of the  
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Lomonosova.  
(Methacrylic acid) (Polymerization)



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(Tool steel) (Electrolytic polishing)